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18. The article of claim 12 having a haze value of from 2 to 5 times less than a polymer blend comprising polyester terephthalate and MXD6.
19. The article of claim 16 having a haze value of from 2 to 5 times less than a polymer blend comprising polyester terephthalate and MXD6.

REMARKS

The Office Action has rejected claims 1-17.

Claims 1 and 14 have been amended to recite a lower limit of low molecular weight polyamide of about 2.1 weight percent. Support for this amendment is found in the specification at page 11, lines 11-13. Claims 1 and 14 have further been amended to clarify that components I and II total 100 weight % of the polymer blend. Support for this amendment is found, for example, in Example 2, pages 16-17 where it is demonstrated that the amount of polyamide in the polymer blend measured in relation to the amount of polyester in the polymer blend. Claims 1 and 14 have further been amended to clarify that the amounts of components A) and B) are based upon 100 mole % dicarboxylic acid and 100 mole % of glycol. Support for this amendment is found in that specification at page 6, lines 27-28.

Claims 2, 3 and 4 have been amended to recite that the dicarboxylic acid component in each of these claims refers to component *i.e.*, the semi-crystalline polyester. Support for these amendments is found in the specification at page 8, lines 1-13.

Claims 12 and 16 have been amended to recite a lower limit of low molecular weight polyamide of about 2.5 weight percent. Support for this amendment is found in the specification at page 11, lines 11-13.

Claims 18 and 19 have been added to recite that the articles of the claims 14 and 16 have haze values of from 2 to 5 times less than a polymer blend comprising polyester terephthalate and MXD6. Support for the claims is found in Example 3, page 17.

Claims 1-19 are pending in the application.

**REJECTION OF CLAIMS 1-17 UNDER 35 USC § 112**

The Office Action has rejected claims 1-17 under 35 USC § 112. Each of the separate grounds of rejection is addressed individually.

The Office Action contends that claims 1 and 14 are unclear regarding the basis of determining the amounts of I, II and A. First, Applicants note that claims 1 and 14 have been amended to clarify that the amount of components I and II in the polymer blend total 100 weight % of the polymer blend. As such, it is respectfully submitted that the basis of determining the amount of components I and II would be clear to one of ordinary skill in the art. With respect to the basis for component A, claims 1 and 14 have been amended to specify that the amounts components A) and B) are based on 100 mole % dicarboxylic acid and 100 mole % of glycol. Also, the statements with respect to the mole % percents of dicarboxylic acid and glycol have been separated from component B) to correct a typographical error in the originally submitted claims where the mole % was not set off from component B. Applicants respectfully submit that these amendments clarify these aspects of claims 1 and 14.

The Office Action further alleges that claims 1 and 14 are unclear "if or how the upper limit of component I limits the claimed subject matter given that it exceeds 100% by weight." With the amendments to claims 1 and 14, it is clarified that the amounts of I and II add up to 100 weight %. Moreover, as set forth in the specification at page 6, lines 27-28, the amount of dicarboxylic acid and glycol add to 200 mole %. Thus, it is respectfully submitted that one of ordinary skill in the art would understand the recited amounts in claims 1 and 14.

The Office Action also contends that in claims 2-4 it is unclear whether the subject matter is referring to the polyester or to the polyamide. Claims 2, 3 and 4 have been amended to recite that the referenced dicarboxylic acid is in relation to component A. Therefore, it is submitted that claims 2-4 are now clear.



**REJECTION OF CLAIMS 1-17 UNDER 35 USC § 102(B) OR, ALTERNATIVELY,  
UNDER 35 USC § 103(A)**

The Office action contends that claims 1-17 are either anticipated or rendered obvious by the following references: WO 93/20147; WO 98/39388; or WO 97/15629. Specifically, the Office Action states that “each of these references discloses compositions comprising a polyester/polyamide blend. . . .” and that “[t]he compositions disclosed by the references meet the requirements of the present claims both in terms of the types of materials and their contents.” Each of these references will be addressed separately.

**Rejections in Light of WO-A-9320147 (“the ‘147 publication”)**

The Office Action contends that the ‘147 publication either anticipates or renders obvious claims 1-17.

The ‘147 publication discloses a polyester/low molecular weight polyamide blend having an excellent gas barrier property and an improved flavor retaining property and clarity. The compositions of the ‘147 publication may contain up to 2 weight percent polyamide. As amended, claims 1 and 14 recite an amount of polyamide of from about 20 to about 2.1 weight percent. Therefore, the ‘147 publication does not anticipate the claims of the present invention.

Further, the claims exhibit an inventive step over the ‘147 publication. In particular, the ‘147 publication states that “[i]t has been determined that the use of [low molecular weight] polyamides at greater than two weight percent on the weight of the polyester cause undesirable haze and color.” See the ‘147 publication at page 7, lines 32-35. Further, the accuracy of this statement is demonstrated by the data in Table VI on page 35. In that Table, the data show that an increase in the amount of low molecular weight polyamide results in a marked increase in haze. In light of this disclosure, there is no suggestion or motivation in the ‘147 publication to utilize an amount of polyamide of greater than about 2.1 weight percent. To the contrary, the ‘147 publication teaches away from increasing the amount of polyamide in the polymer blend.

Moreover, new claims 18 and 19 are patentable over the ‘147 publication. As noted, the ‘147 publication clearly discloses that increasing the amount of low molecular weight polyamide in the polymer blend increases the haze of articles *e.g.*, bottles, formed from the polymer blend. Thus, there is no suggestion or motivation in this reference that articles can be

formed from low molecular weight polyamide/semi-crystalline polyester where the haze values are from 2 to 5 times lower than blends prepared from polyester/MXD6.

**Rejections in Light of WO/97/15629 ("the '629 publication")**

The Office Action also alleges that claims 1-17 are either anticipated or rendered obvious by the '629 publication.

The '629 publication discloses polyester blend compositions comprising from 98.0 to 99.95 weight percent polyester and from 2.0 to 0.05 weight percent of a polyamide. As in the '147 publication, the '629 publication discloses that low molecular weight polyamide amounts of "greater than two weight percent . . . cause undesirable levels of haze." See the '629 publication at page 7, lines 31-34. Therefore, for the same reasons set forth above regarding the '147 publication, the claimed invention is neither anticipated nor rendered obvious by the '629 publication. Similarly, new claims 18 and 19 are also patentable over this reference.

**Rejections in Light of WO/98/39388 ("the '388 publication")**

The Written Opinion further contends that the '388 publication either anticipates or renders obvious claims 1-17.

Like the '147 and '625 publication, the '388 publication discloses polyester blend compositions comprising from 98.0 to 99.95 weight percent polyester and from 2.0 to 0.05 weight percent of a polyamide. Further, the '388 publication also states that "polyamides at greater than about two weight percent . . . of the polyester cause undesirable levels of haze." See the '388 publication at page 5, lines 27-29. Therefore, for the same reasons set forth above regarding the '147 and '625 publications and D2, the claimed invention is neither anticipated nor rendered obvious by the '388 publication. Similarly, new claims 18 and 19 are also patentable over this reference.

**CONCLUSION**

In light of the above amendments and arguments, Applicants respectfully request that the rejections be withdrawn.

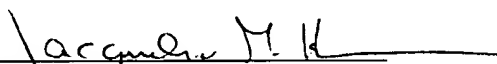
A check in the amount of \$36.00 is included herewith to cover the cost of two additional dependent claims over the number of claims paid for in the original filing fee. No

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additional fee is believed to be due; however, the Commissioner is hereby authorized to charge any deficiency or credit any overpayment in fees to Deposit Account No. 14-0629.

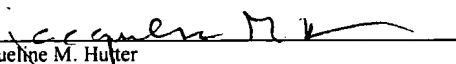
Respectfully submitted,  
NEEDLE & ROSENBERG, P.C.

  
Jacqueline M. Hutter  
Registration No. 44,792

NEEDLE & ROSENBERG, P.C.  
Suite 1200, The Candler Building  
127 Peachtree Street, N.E.  
Atlanta, Georgia 30303-1811  
(404) 688-0770

CERTIFICATE OF MAILING

I hereby certify that this Amendment pursuant to 37 C.F.R. § 1.111 is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on the date shown below.

  
Jacqueline M. Hutter

9/13/01  
Date



Please enter the following non-marked up version of the claims:

**MARKED UP VERSION OF CLAIM AMENDMENTS**  
**TO SHOW CHANGES MADE**

1. A polymer blend comprising:

I. from about 80 to about 99.5 weight % of a semi-crystalline polyester, which comprises the residues of

(A) a dicarboxylic acid component comprising repeat units from at least about 85 mole % of terephthalic acid, naphthalene-2,6-dicarboxylic acid or a mixture thereof; and

(B) a glycol component comprising repeat units from at least about 85 mole % ethylene glycol,  
wherein components A) and B) are based on 100 mole % dicarboxylic acid and 100 mole % glycol; and

III. from about 20 to [greater than about 2] about 2.1 weight % of a low molecular weight polyamide, having a number average molecular weight of less than about 15,000, having the repeating unit **A-D**, wherein **A** is the residue of a dicarboxylic acid comprising adipic acid, isophthalic acid, terephthalic acid, 1,4-cyclohexanedicarboxylic, resorcinol dicarboxylic acid, or naphthalenedicarboxylic acid, or a mixture thereof, and **D** is a residue of a diamine comprising *m*-xylylene diamine, *p*-xylylene diamine, hexamethylene diamine, ethylene diamine, or 1,4-cyclohexanedimethylamine, or a mixture thereof,

wherein components I and II total 100 weight % of the polymer blend.

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2. The polymer blend of claim 1, wherein the dicarboxylic acid component of the semi-crystalline polyester comprises terephthalic acid.
3. The polymer blend of claim 1, wherein the dicarboxylic acid component of the semi-crystalline polyester comprises naphthalenedicarboxylic acid.
4. The polymer blend of claim 1, wherein the dicarboxylic acid component of the semi-crystalline polyester is modified with up to about 20 mole % of phthalic acid, cyclohexanedicarboxylic acid, cyclohexanediacetic acid, diphenyl-4,4'-dicarboxylic acid, succinic acid, glutaric acid, adipic acid, azelaic acid, sebacic acid or a mixture thereof.
11. The polymer blend of claim 1, wherein the low molecular weight polyamide is from about 20 to [greater than 2] 2.5 weight %.
14. A method for reducing gas permeability of polyester comprising blending:
  - I. from about 80 to about 99.5 weight % of a semi-crystalline polyester, which comprises the residues of:
    - (A) a dicarboxylic acid component comprising repeat units from at least about 85 mole % of terephthalic acid, naphthalene-2,6-dicarboxylic acid or a mixture thereof; and
    - (B) a glycol component comprising repeat units from at least about 85 mole% ethylene glycol,

wherein components A) and B) are based on 100 mole % dicarboxylic acid and 100 mole % of glycol; and

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- II. from about 20 to [greater than about 2] 2.1 weight % of a low molecular weight polyamide having a number average molecular weight of less than about 15,000 having the repeating unit **A-D**, wherein **A** is the residue of a dicarboxylic acid comprising adipic acid, isophthalic acid, terephthalic acid, 1,4-cyclohexanedicarboxylic, resorcinol dicarboxylic acid, or naphthalenedicarboxylic acid, or a mixture thereof, and **D** is the residue of a diamine comprising *m*-xylylene diamine, *p*-xylylene diamine, hexamethylene diamine, ethylene diamine, or 1,4-cyclohexanedimethylamine, or a mixture thereof

wherein I and II total 100 weight % of the polymer blend.

15. The method of claim 14, wherein the low molecular weight polyamide is from about 20 to [greater than 2] 2.5 weight %.

**Please add new claims 18 and 19 as follows:**

18. The article of claim 12 having a haze value of from 2 to 5 times less than a polymer blend comprising polyester terephthalate and MXD6.
19. The article of claim 16 having a haze value of from 2 to 5 times less than a polymer blend comprising polyester terephthalate and MXD6.